Code No. 8050

FACULTY OF PHARMACY

B.Pharmacy 3/4 I - Semester (Main) Examination, October/November 2014

Subject : Physical Pharmacy - I

Time: 3 Hours **Max. Marks: 70**

Note: Answer all questions. All questions carry equal marks.

1 (a) Explain different methods for achieving liquefaction of gases. Write its application in the formulation of aerosols. (8)
(b) Write about : (i) X-ray diffraction (ii) Liquid crystalline state (6)

OR

(c) Explain the phase diagram for one component system. (6)
(d) Write important postulates of kinetic molecular theory of gases. (4)
(e) Write about solid dispersions. (4)

2 (a) Define and explain enthalpy and entropy. (6)
(b) State and explain first and second law of thermodynamics with applications. (6)
(c) State Law of conservation of energy. (2)

OR

(d) Define, explain and write applications of heat of combustion and heat of neutralization. (6)
(e) Explain isothermal reversible expansion of an ideal gas and maximum work done in reversible expansion. (6)
(f) Write a note on Gibb's free energy. (2)

3 (a) Define molarity, molality, normality. Explain in which situations these expressions are useful. (6)
(b) Explain Arrhenius theory of electrolyte dissociation and its limitations. (6)
(c) What are colligative properties? (2)

OR

(d) How do you determine elevation of boiling point? (6)
(e) Explain ionization of weak acids. (5)
(f) Write Debye Huckel's equations. (3)

4 (a) Write a note on pharmaceuticals buffers and physiological buffers. (8)
(b) Explain the relation between pH, pKa and solubility of weak electrolytes. (6)

OR

(c) How do you prepare a pharmaceutical buffer? (6)
(d) Explain methods for adjusting isotonicity and pH of solutions. (8)

5 (a) How do you measure pH using hydrogen electrode? (6)
(b) Draw and explain Daniell cell. (6)
(c) Write Nernst equation and explain the terms therein. (2)

OR

(d) How do you measure EMF of a cell? (5)
(e) Write a note on (5+4)
(i) Catalyst (ii) Oxidation reduction electrodes

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